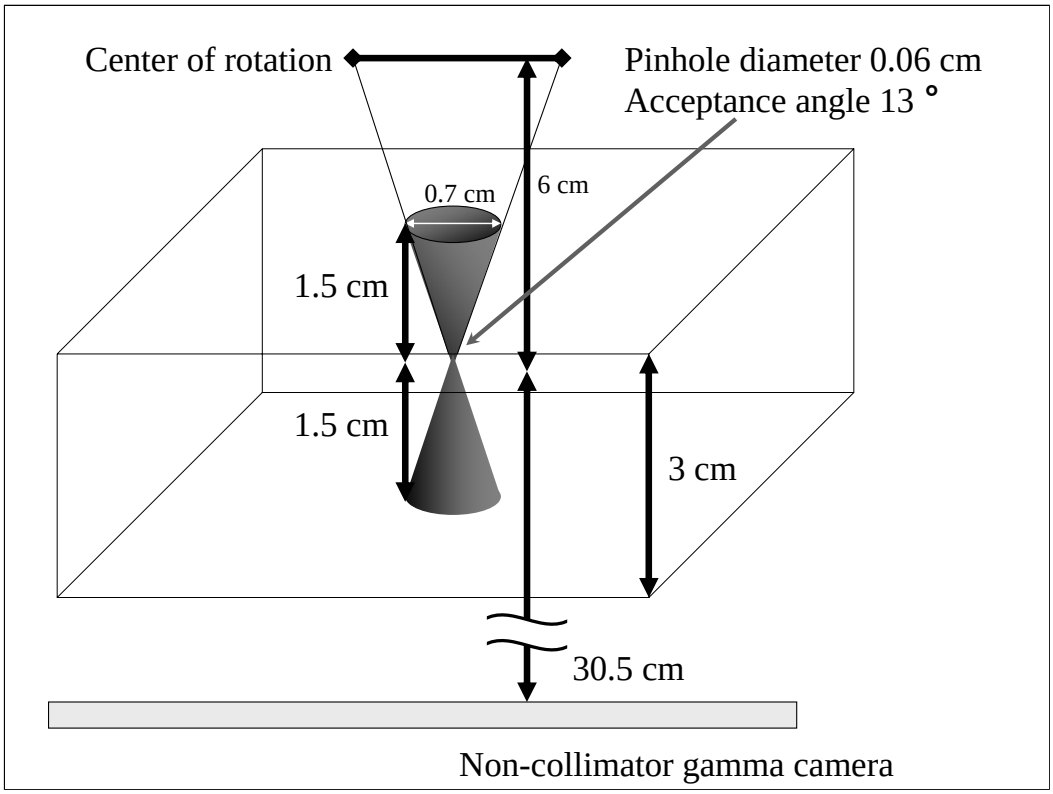

Fig. 1. Design of the pinhole collimator. The thickness of the lead shielding was 3 cm. The pinhole diameter of knife-edge aperture was 0.06 cm. The acceptance angle was 13 ° . The cylinder was equipped with a non-collimator gamma camera at a distance of 30.5 cm. The radius of rotation was 6 cm and the magnification was 5.1 times.

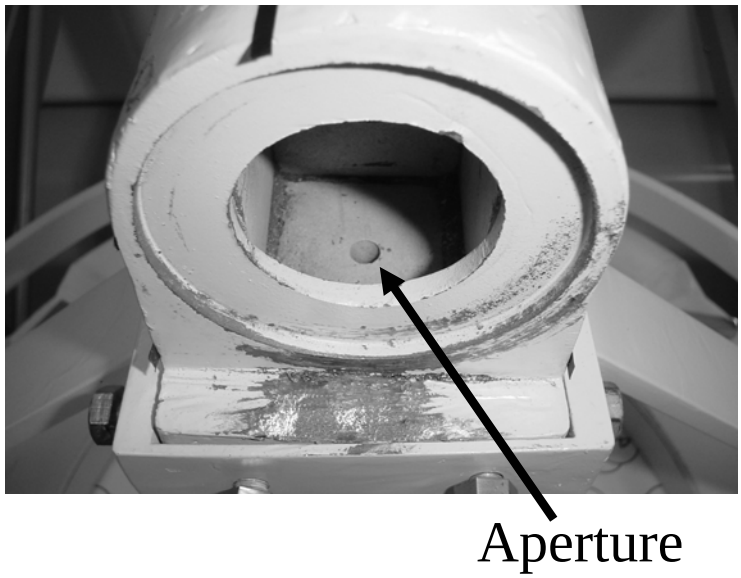

Fig 2. View of pinhole collimator. The aperture appears in the center of the photograph.

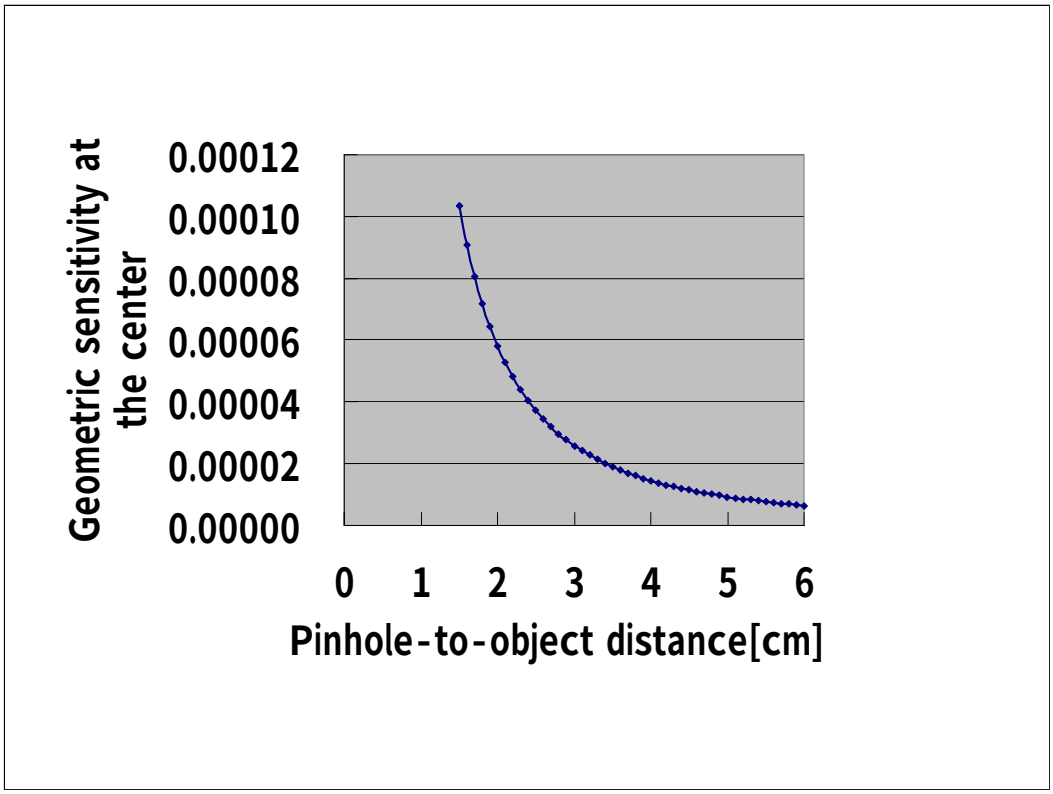

Fig. 3. Relationship between pinhole-to-object distance and geometric sensitivity at the center of field-of-view.

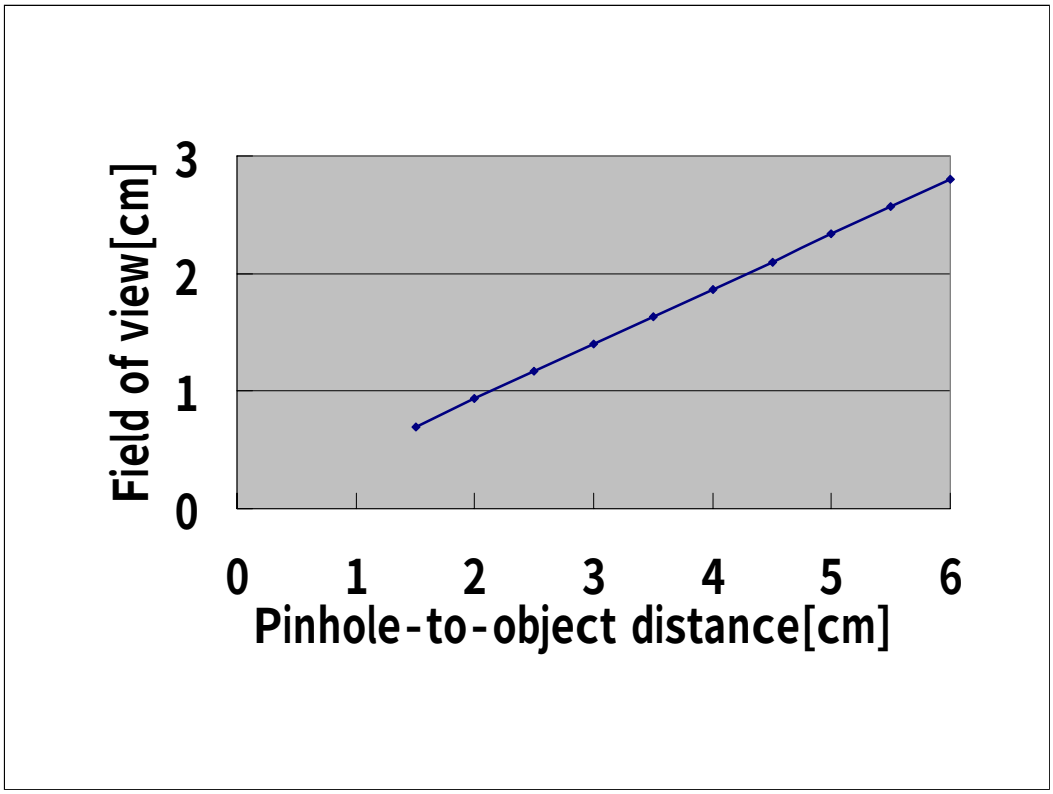

Fig. 4. Relationship between pinhole-to-object distance and field-of-view size.

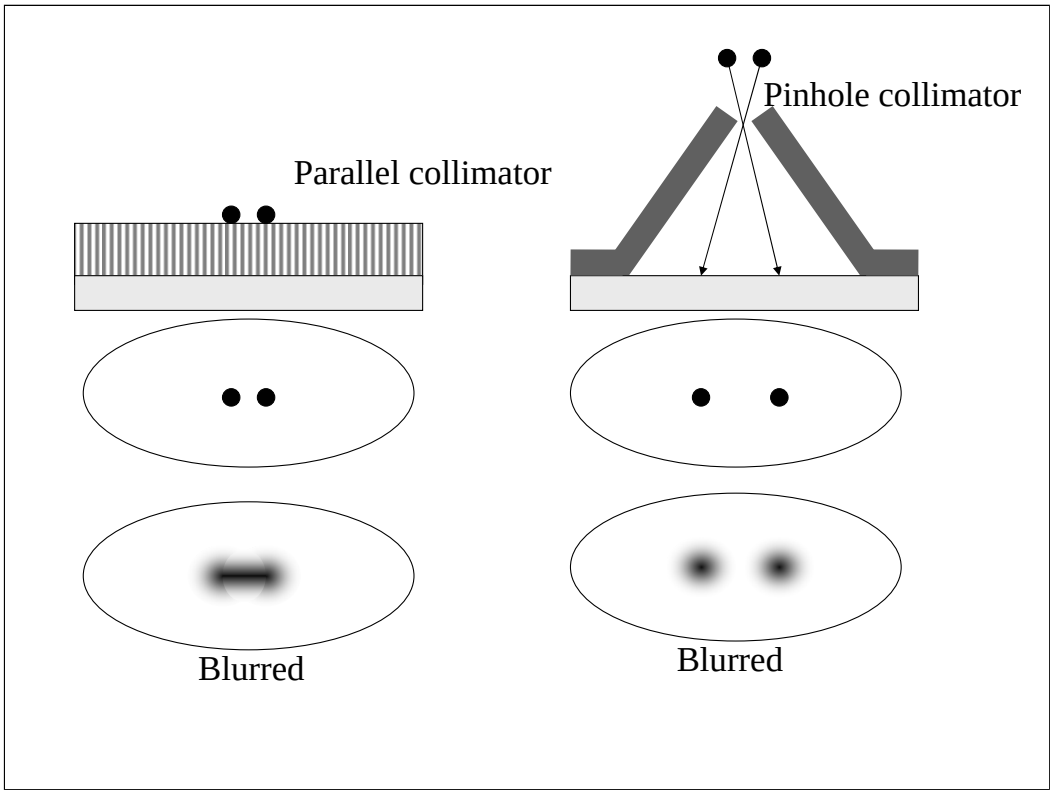

Fig.5 Schema of parallel collimator vs. pinhole collimator. Firstly, an image acquired using the pinhole collimator is enlarged. Secondly, this image is blurred. In contrast, an image acquired using the parallel collimator is initially blurred.

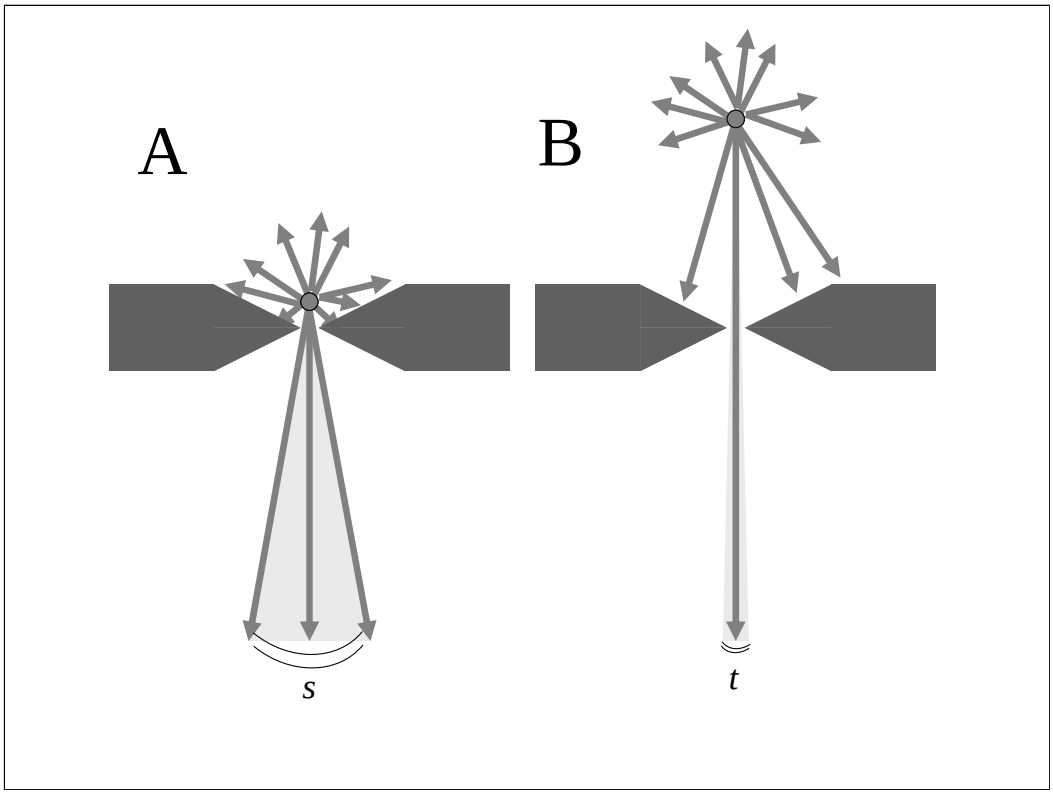

Fig. 6. Schema of pinhole sensitivity with distance. (**A**) Short pinhole-to-object distance. The solid angle ***s*** is broad. (**B**) Long pinhole-to-object distance. The solid angle ***t*** is narrow.

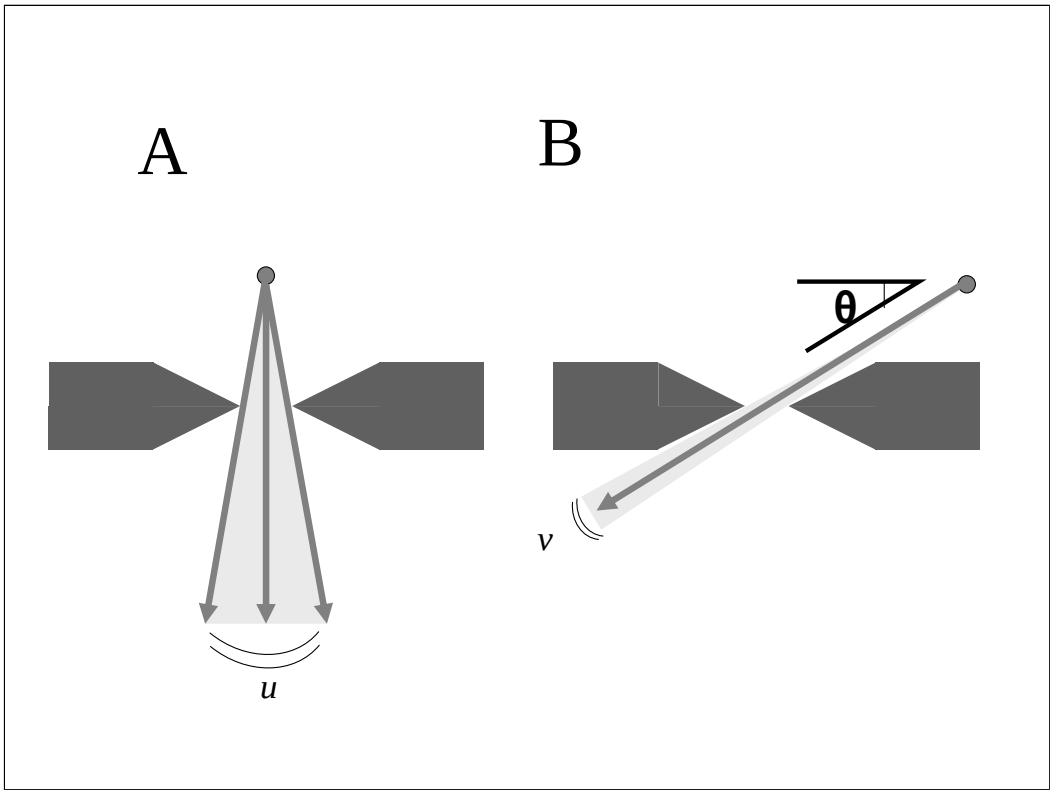

Fig. 7 Schema of pinhole sensitivity at θ. Angle θ depends on position in FOV (**A**) An object is positioned at the center of FOV. The solid angle ***u*** is broad. (**B**) An object is positioned at the rim of FOV. The solid angle ***v*** is narrow.

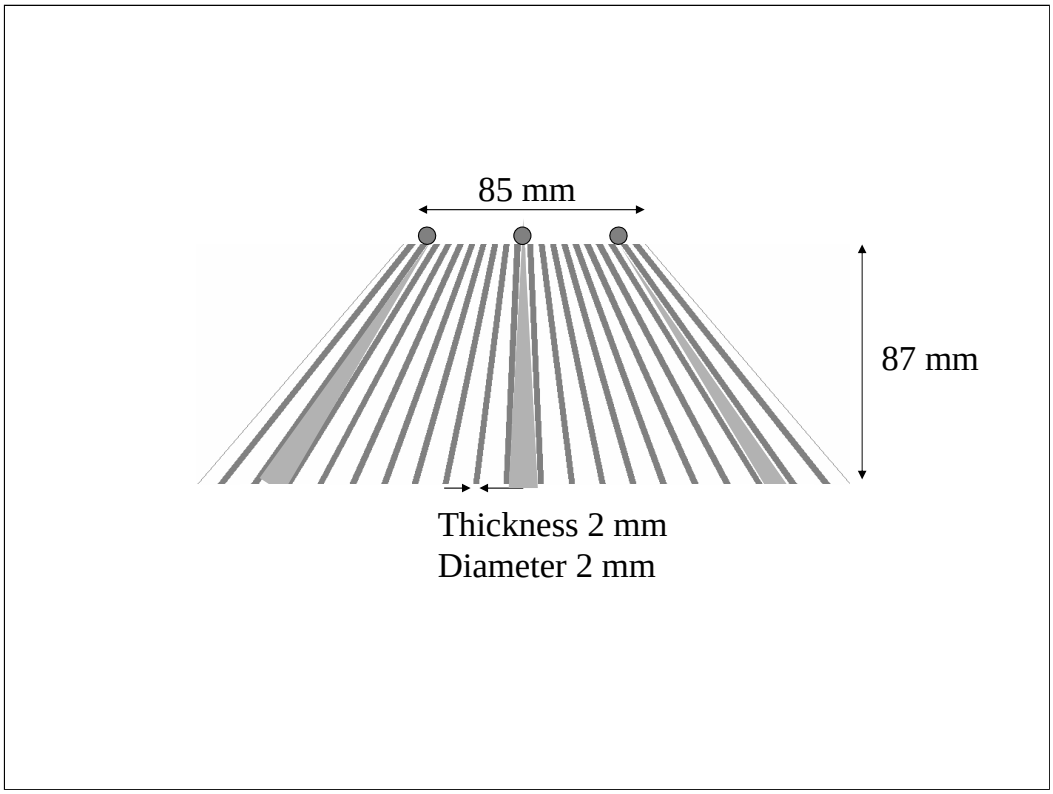

Fig. 8. Schema of the high-energy converging collimator. Diameter of hole is 2 mm. Septum thickness is 2 mm. The height of collimator is 87 mm.

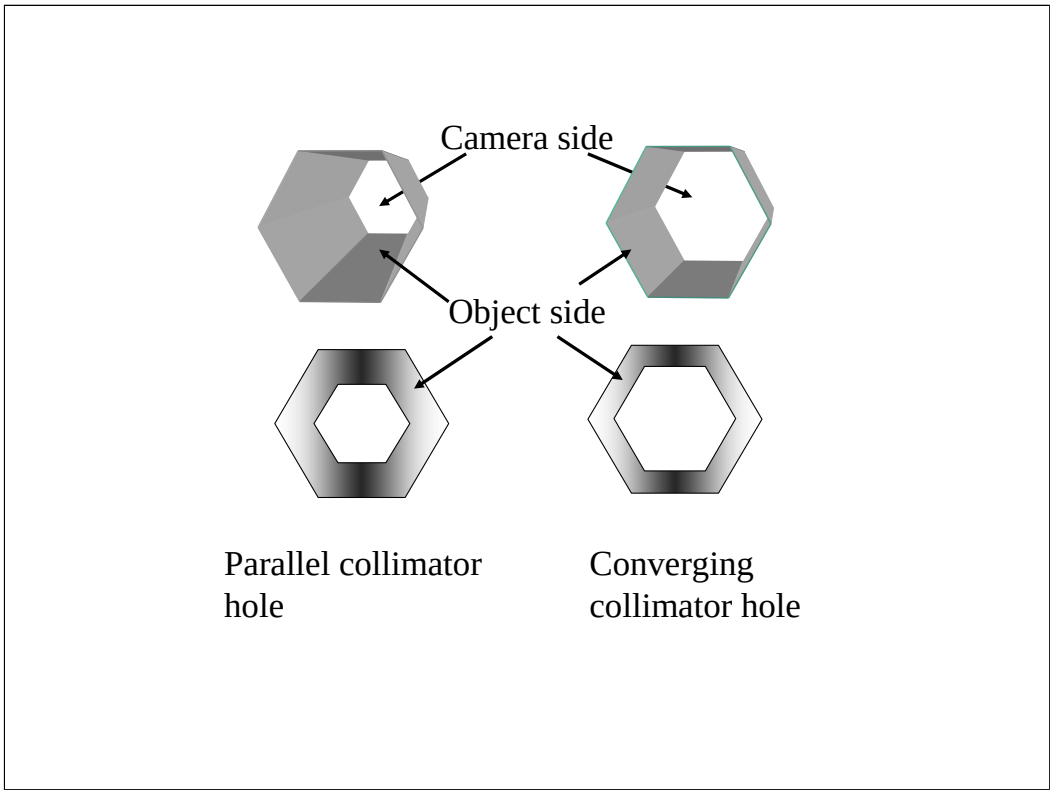

Fig. 9. Object-side-views of parallel collimator and converging collimator holes. The aperture of the converging collimator is larger than that of the parallel collimator.